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NOTES AND MEMORANDA.

EARNINGS OF INTEGRATED INDUSTRIES.

In reviewing editorially Professor Meade's article on "Capitalization of the United States Steel Corporation," published in the *Quarterly Journal of Economics* for February, the *New York Nation* says: "The inferences drawn, as regards the future of the Steel Corporation's capital, are extremely interesting, but not altogether conclusive." Not only is this true, but the article contains an error of such fundamental importance that it should not pass unnoticed. The argument is, however, presented with such force, ingenuity, and apparent thoroughness as to necessitate a careful analysis before the confusion of ideas can be exactly located.

Professor Meade's fundamental proposition, at least so far as the bearing of the article on economic theory is concerned, is that the net earnings of an integrated industry fluctuate more violently than those of an "interdependent industry." "The proposition cannot be too often emphasized that integrated industry means more stable cost of production, and therefore, unless an equal stability can be imparted to the prices of sale and the volume of output, a wider zone of profit variation. With integrated industry, costs do not rise with prices; and profits, therefore, increase with greater rapidity than when other profits are deducted from them. But, on the other hand, when the turn comes and the tide of prosperity ebbs, since the expenses of production have not risen with the advance, neither do they decline with the depression; and prices fall with slight compensation from decreasing costs. The capitalization of the steel trust represents the top of the wave of prosperity. It is not difficult to forecast the value of that capitalization when the wave recedes."

“ . . . the major portion of the earnings of the corporation represent the combined profits of a long series of productive factors,—the mine, the coke plant, the railroad and steamship, the blast furnace, the Bessemer converter, the slabbing mill, and the plate mill,—all converging and uniting in the earnings from the sale of rails, tubes, tin plate, cotton ties, and structural material. These gigantic profits and values, under the old-time system, before the steel industry became integrated, would have been divided among at least six classes of producers.” . . . The author then presents, as representing the financial history of one of these six classes of producers, the following table in regard to the business of “one of the best of the independent furnace companies in the state in which it is located” :—

<i>Year.</i>	<i>Price of Iron per Ton.</i>	<i>Cost of Materials.</i>	<i>Profit per Ton.</i>	<i>Annual Produc- tion, Tons.</i>	<i>Net Earnings.</i>
1890 . .	\$15.74	\$12.70	\$2.00	39,659	\$67,928.29
1891 . .	14.57	12.29	1.24	37,589	39,072.96
1892 . .	13.63	11.73	.86	30,755	18,244.77
1893 . .	12.31	10.27	1.00	50,957	25,787.98
1894 . .	10.58	8.82	.72	51,163	13,714.77
1895 . .	10.74	8.67	1.03	53,932	42,971.86
1896 . .	11.29	9.44	.71	37,107	20,815.94
1897 . .	10.40	8.55	.81	63,137	33,150.57
1898 . .	9.79	7.99	.76	64,816	32,319.51

We have here a decline of 30 per cent. in the cost of materials from 1890 to 1894 ; while in the case of an integrated industry, otherwise similar, the author estimates the decline in “producers’ cost” at less than 20 per cent. Hence, he asserts, there will be greater fluctuations in the earnings of an integrated industry than in those of a similarly situated interdependent company.

Clearly, if a comparison between the respective earnings of integrated and interdependent industries is to be of value from the standpoint of economic theory, the interdependent company chosen as an example must be fairly representative of the various successive productive steps which have been integrated ; otherwise we shall be open to the danger of comparing the exceptional or the accidental, and our results will have no more value than an attempt to subtract trees from sheep.

We have, then, an integrated industry of six processes. Process I. obtains its material from nature, the completed product of Process I. forms the material for Process II., the product of II. is the material of III., and so on until the product of Process VI. is ready for the general market. The value of the final product of this complete integrated industry will be composed of four parts: (1) cost of materials for Process I.; (2) cost of labor expended upon these materials throughout the six processes; (3) certain incidental expenses, such as rents, interest on temporary loans, etc., which, in a manufacturing enterprise, are so small in proportion to the other factors as to be negligible for the purposes of this discussion; (4) earnings on capital. Our author's hypothesis is that (1) and (2) would have decreased from 1890 to 1894 less than 20 per cent., while in the case of an interdependent company (1) decreased 30 per cent. and (2) declined 20 per cent. Hence, the price of the final product being fixed by supply and demand, (4) would have decreased in greater proportion in the integrated than in the interdependent industry.

Suppose, then, our integrated company to be broken up into six interdependent companies corresponding to the six processes above mentioned. Since all questions as to the increased efficiency of integrated industry or its better control over markets and prices are expressly eliminated by Professor Meade's hypothesis, Company VI. would sell its product at the same prices as the integrated company both in 1890 and 1894. Its decrease in labor-cost would also be the same; but Professor Meade asserts that it can buy its material at a decrease of 30 per cent. Hence Company V. must sell its finished product (the material of Company VI.) at a decline of 30 per cent.; and, as its labor-cost falls off only 20 per cent., it must, evidently, in order to prevent its earnings from declining more rapidly in proportion than those of the integrated company under similar circumstances, secure its material at a decrease of more than 30 per cent.,—let us say 35 per cent. Accordingly, Company IV. sells its product at a decline of 35 per cent., and must buy its material at 40 per cent. less than before; Company III. buys at 45 per cent. decrease; II., at a fall of 50 per cent.; and I., 55 per cent. lower. Nor would

it change the case to suppose that some portion of each company's material is obtained from outside sources rather than from the next preceding link of the interdependent chain; for whatever additional profit is obtained through a lower cost of such outside material is gained at the expense of some other industry, in some other interdependent chain, which must, in its turn, according to the general hypothesis, make up for this loss by purchasing its own material at a still lower price, and so on down by a separate route to the material obtained from nature.

In other words, since by hypothesis the decrease in labor-cost is the same for both the integrated and the interdependent companies, and the falling off in earnings is alleged to be smaller in the case of the interdependent companies, any greater rate of decline in the cost of material must inevitably be forced back from one company to the next in a gradually increasing ratio, until the cost of material for Company I. would be more than 50 per cent. less in 1894 than in 1890; but this cost of material for Company I. is the same as the cost of material for Process I. of the integrated company, on which the decline was postulated to be less than 20 per cent. The inconsistency of Professor Meade's position is thus manifest.

In point of fact, when internal efficiency, economy, and control over price are thus ruled out of the discussion, the difference between the six successive interdependent companies, considered in the aggregate, and an integrated company, consisting of the six successive processes, is merely one of name and ownership. The aggregate earnings of the six companies will be the same as the final earnings of the integrated company, and will undergo the same fluctuations under the same conditions.

The broader the scope of the integration, the more clearly evident does this fact become. Suppose all the industries of a nation united in one gigantic company, without change in efficiency or control over price. It then becomes self-evident that the earnings of this company must be precisely the same as the aggregate earnings of the various industries of which it is composed.

A feature which was expressly excluded from the discuss-

sion,— viz., the increased ability of the integrated company to exercise control over prices,— is really the most important consideration as regards fluctuation of earnings. A company which, like the United States Steel Corporation, controls so large a proportion of an industry as to be able to dictate prices within certain limits,— subject to the danger of, on the one hand, limiting consumption of its products at home and abroad, encouraging increased competition from small outside industries, and inviting adverse legislation; or, on the other hand, unnecessarily cutting down its own profits or inciting its workmen to strikes through unreasonably low wages,— has both the strongest motives and a considerable power to moderate those speculative fluctuations which have always heretofore caused that “confusion of contracts and uncertainty of prices,” “ignorance, distrust, and friction,” which Professor Meade so graphically describes. The independent producer must seize the highest prices obtainable during periods of speculative activity to compensate himself for the depression which he knows will come sooner or later, and which he is powerless to avert. But the integrated company which can exercise a partial control has nothing to gain by putting prices a dollar higher when that figure is obtainable through the temporary vicissitudes of speculative demand, only to see them go a dollar lower than would otherwise have been the case in the next period of speculative depression. On the contrary, it has everything to lose by such a policy. Every legitimate interest of such a company is served by stability of prices. A firm, unfluctuating market for steel relieves buyers of those harassing uncertainties which inject an element of gambling into what should be purely business undertakings, and thus encourages the largest, steadiest, and most general consumptive demand. It is thus that factories and mines can be kept constantly in operation without the demoralizing and oftentimes disastrous shut-downs which result from over-bought markets and consequent paralysis of demand. Thus is built up a permanent, well-knit, selected wage-force, capable of doing the best work in the most efficient manner,— in strong contrast to the transient, unreliable, unskilful, incohesive body of workmen with which employers engaged in a fluctuating busi-

ness are often forced to content themselves. Hence it may be considered certain that the well-managed integrated industry will do what it can, not only to maintain prices at the most profitable level, but also to prevent fluctuations.

And it can do much. The managers of the United States Steel Corporation have already amply demonstrated that they have the courage, the sagacity, and the power deliberately to accept, in a time of increasing demand, a lower price for their products than they might have obtained. They will have a corresponding power to maintain prices in times of depression. Not every integrated industry would have so great an influence: it is quite conceivable that, in some cases, the integrated company would have but little more power over prices than its separate members. But it is safe to say that, on the average, and as a general principle, an integrated industry can and will do more toward lessening fluctuations in prices than the interdependent companies of which it is composed could or would have done.

In conclusion, then, we may say that as to the absurd over-capitalization of the United States Steel Corporation there can be no question—it is a matter of common knowledge; and it is not impossible that, in a period of declining prices like that from 1890 to 1894, its profits might shrink as rapidly as those of the particular blast furnace whose financial history Professor Meade has tabulated. But, as a general principle of economic theory, the earnings of integrated industries may be expected to fluctuate *less* violently than those of interdependent companies.

G. C. SELDEN.

NORTHWOOD, NEW HAMPSHIRE.